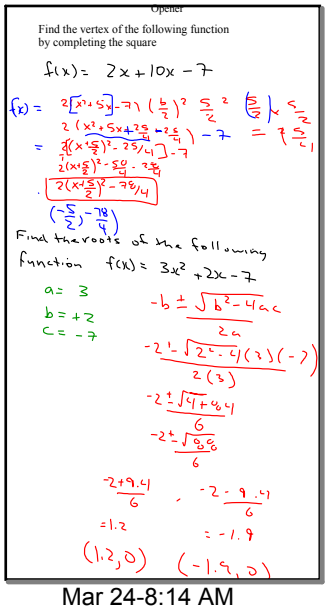
Opener

i) Find the vertex of the following function by completing the square

$f(x) = 2x^2 + 10x - 7$

ii) Find the roots of the following function $f(x) = 3x^2 + 2x - 7$

Mar 24-8:14 AM

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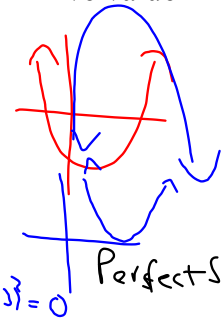
4.4 Discriminant p227

i) $b^2-4ac$ = + ve value

2 real roots



ii) $b^2-4ac = 0$

1 real root

$x^2 - 6x + 9 = 0 \quad (x-3)^2 = 0$

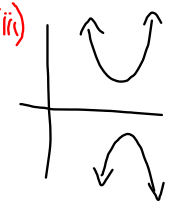
Perfect Squares

Mar 31-9:26 AM

4.4 p 227

Discriminant

iii)



$b^2-4ac$ = -ve

no solution

$\sqrt{b^2-4ac}$

no real roots

Mar 31-9:04 AM

Determine the # of roots for each equation

a) $4x^2 - 10x + 5 = 0$

$D = b^2 - 4ac$

$a = 4 \quad = (-10)^2 - 4(4)(5)$

$b = -10 \quad = 100 - 80$

$c = +5 \quad = 20$

∴ 2 real roots

Mar 31-9:30 AM

ii) $3x^2 + 5 = 0$

$a = 3$

$b = 0$

$c = 5$

$D = b^2 - 4ac$

$= 0^2 - 4(3)(5)$

$= 0 - 60$

$= -60$

No Real Roots

Mar 31-9:35 AM

$4x^2 - 20x + 25$

$a = +4$

$b = -20$

$c = +25$

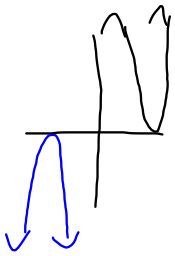
$b^2 - 4ac$

$(-20)^2 - 4(4)(25)$

$400 - 400$

$= 0$

$\therefore$ 1 real root



Oct 16-10:18 AM

For what value of $k$ does $2x^2 + 4x + k = 0$ have two distinct roots, one solution? and no solution?

One Solution

$a = 2$

$b = 4$

$c = k = (?)$

$0 = b^2 - 4ac$

$0 = 4^2 - 4(2)(k)$

$0 = 16 - 8(k)$

$-16 = -8k$

$\frac{-16}{-8} = \frac{-8k}{-8}$

$2 = k$

$k > 2$ – no solutions

$k < 2$ – two solutions

$k = 2$ – one solution

Mar 31-9:37 AM

p 232-233

Hwk

q 2, 4 (odds) 6, 7, 9, 13

Mar 31-9:52 AM

Mar 24-8:41 AM